

Topic: Rules of exponents**Question:** Simplify the expression.

$$x \cdot x$$

Answer choices:

A x^2

B $2x$

C x

D $3x$



Solution: A

We can rewrite the given expression.

$$x \cdot x$$

$$x^1 \cdot x^1$$

Then using the fact that

$$x^a x^b = x^{a+b}$$

and noticing that here we have $a = 1$ and $b = 1$, we get

$$x^{1+1}$$

$$x^2$$



Topic: Rules of exponents**Question:** Simplify the expression.

$$x^2 \cdot x^2 \cdot x^5$$

Answer choices:

A x^{20}

B x^4

C x^9

D x^7



Solution: C

We'll use the fact that

$$x^a x^b = x^{a+b}$$

or, in this particular case,

$$x^a x^b x^c = x^{a+b+c}$$

Here we have $a = 2$, $b = 2$, and $c = 5$, so we get

$$x^{2+2+5}$$

$$x^9$$



Topic: Rules of exponents**Question:** Simplify the expression.

$$x^m \cdot x^n$$

Answer choices:

A x^{m+n}

B x^{m-n}

C x^{mn}

D x^{2m+n}



Solution: A

When you multiply exponential expressions with like bases, you add the exponents. The product

$$x^m \cdot x^n$$

has like bases, since both bases are x . So we'll add the exponents, keeping the same base, and the result will be

$$x^{m+n}$$

